Report on Soil Test

Auburn University Soil Testing Laboratory

Auburn University, AL 36849-5411

McGehee Engineering Corp Inc

450 19th St West

Jasper, AL 35501

County:Walker

District:1

Test Date:06/01/10

				SOIL TEST RESULTS					RECOMMENDATIONS			
L A B No.	Sample Designation	Crop	Soil Group*	pH**	Phosphorus P***	Potassium K***	Magnesium Mg***	Calcium Ca***	LIME-STONE	N	P_2O_5	K_2O
					Pounds/Acre				Tons/Acre	Pounds/Acre		
19908	Black Warrior Minerals Mine 1 TS1 See Comment 1 See Comment 2	Revegetation	4	4.4	H 122	M 146	H 192	H 307	2.0	60	0	40
19909	TS2 See Comment 1 See Comment 2	Revegetation	4	4.6	H 144	M 189	H 246	H 332	2.0	60	0	40
19910	TS3 See Comment 1 See Comment 2	Revegetation	4	4.9	H 80	M 149	H 578	H 622	2.0	60	0	40
19911	TS4 See Comment 1 See Comment 2	Revegetation	4	4.4	H 103	L 99	H 133	H 346	2.5	60	0	50
19912	TS5 See Comment 1 See Comment 2	Revegetation	4	4.5	M 55	M 154	H 276	H 581	1.5	60	40	40
19913	TS6 See Comment 1 See Comment 2	Revegetation	4	4.8	H 116	L 77	H 82	L 163	1.5	60	0	60
19914	TS7 See Comment 1 See Comment 2	Revegetation	4	4.3	VH 234	L 119	H 154	H 409	3.0	60	0	40

* 1. Sandy soil (CEC < 4.6 $cmol_c kg^{-1}$)

* 2. Loams and Light clays (CEC = 4.6-9.0 $cmol_c kg^{-1}$)

* 3. Clays and soils high in organic matter (CEC > 9.0 $cmol_c kg^{-1}$)

* 4. Clays of the Blackbelt (CEC > 9.0 $cmol_c kg^{-1}$)

** 7.4 or higher - Alkaline - - - - - - - - - - - - - 6.6-7.3 - Neutral - - - - - - - - - - - - 6.5 or lower - Acid - - - - - - - - - - - -5.5 or lower - Strong Acid

*** Extractable nutrients in pounds per acre

If soil group = 1, 2 or 3, Method of Analysis = Mehlich-1. If soil group = 4, Method of Analysis = Miss/Lancaster.

Approved by: Steven Hulsey

Print Date: 18 November 2010

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					Pounds/Acre				Tons/Acre	Pounds/Acre		
19915	SP1 See Comment 2	Revegetation	4	7.2	H 109	VH 603	H 1192	H 943	0.0	60	0	0
19916	SP2 See Comment 2	Revegetation	4	7.5	H 96	VH 484	H 840	H 1488	0.0	60	0	0
19917	SP3 See Comment 2	Revegetation	4	7.1	M 65	VH 407	H 960	H 751	0.0	60	40	0
19918	SP4 See Comment 2	Revegetation	4	5.7	VH 164	H 237	H 768	H 779	0.0	60	0	0

Comment No.1: Soil acidity (low pH) can be corrected with either dolomitic or calcitic lime.

Comment No.2: For perennial winter grass pasture, apply N, P, and K as recommended by September 1. Repeat N application in February. If grass is to be cut for hay, in February apply up to 40 pounds N and 35 pounds K2O per ton of anticipated hay yield.

The number of samples processed in this report is: 11

For further information call your county agent: (205) 221-3392

* 1. Sandy soil (CEC < 4.6 $cmol_c kg^{-1}$)

* 2. Loams and Light clays (CEC = 4.6-9.0 $cmol_c kg^{-1}$)

* 3. Clays and soils high in organic matter (CEC > 9.0 $cmol_c kg^{-1}$)

* 4. Clays of the Blackbelt (CEC > 9.0 $cmol_c kg^{-1}$)

** 7.4 or higher - Alkaline - - - - - - - - - - - - - - 6.6-7.3 - Neutral - - - - - - - - - - - - - 6.5 or lower - Acid - - - - - - - - - - - - -5.5 or lower - Strong Acid

*** Extractable nutrients in pounds per acre

If soil group = 1, 2 or 3, Method of Analysis = Mehlich-1. If soil group = 4, Method of Analysis = Miss/Lancaster.

Approved by: Joseph Hulsey

Print Date: 18 November 2010

Mine Analysis Report
Auburn University
Soil Testing Lab

McGehee Engineering Corporation
Attn: Barry Kirkpatrick
450 19th Street West
Jasper, AL 35501

ALFA Agricultural Service & Research Building
961 S. Donahue Dr.
Auburn University, Auburn, AL 36849-5411
Phone (334) 844-3958
Soillab@auburn.edu

Results

Mine Name and Location: Black Warrior Minerals, Inc. Mine #1 **Special Analysis #:** 10.S2189-2199 **PO #:** N/A

Lab ID	Sample ID	Sulfur (S) %					Organic Matter (OM) %	Nitrate Nitrogen (NO_3-N) ppm	Neutralizing Potential Tons CaCO3 per 1000 Tons Material	Maximum Potential Acidity (MPA)	Particle Size				
		Rep 1	Rep 2	Rep 3	Rep 4	Avg					% Sand	% Silt	% Clay	Textural Class	H_2O Availability cm/cm
19908	TS-1	0.0135	0.0126	0.0151	0.0143	0.0139	1.6	3.2	<1.0	0.43	41.3	30.0	28.8	Clay Loam	0.13
19909	TS-2	0.0184	0.0170	0.0166	0.0177	0.0174	2.0	4.9	1.64	0.54	35.0	37.5	27.5	Clay Loam	0.14
19910	TS-3	0.0229	0.0216	0.02	0.0261	0.0227	4.4	2.9	3.04	0.71	38.8	38.8	22.5	Loam	0.14
19911	TS-4	0.0157	0.0132	0.0131	0.0124	0.0136	2.9	3.5	2.57	0.43	43.8	36.3	20.0	Loam	0.13
19912	TS-5	0.0128	0.0119	0.0131	0.0114	0.0123	1.7	2.8	2.11	0.38	46.3	25.0	28.8	Sandy Clay Loam	0.12
19913	TS-6	0.0145	0.0134	0.0146	0.0147	0.0143	3.2	3.6	2.34	0.45	48.8	36.3	15.0	Loam	0.13
19914	TS-7	0.0170	0.0183	0.016	0.0167	0.0170	3.7	4.7	<1.0	0.53	27.5	47.5	25.0	Loam	0.16
19915	SP-1	0.0387	0.0423	0.0487	0.0466	0.0441	1.5	2.4	6.99	1.38	55.0	26.3	18.8	Sandy Loam	0.11
19916	SP-2	0.0450	0.0414	0.0548	0.0466	0.0469	1.5	2.0	6.99	1.47	57.5	25.0	17.5	Sandy Loam	0.11
19917	SP-3	0.0381	0.0358	0.0365	0.0371	0.0369	2.0	1.8	6.75	1.15	51.3	31.3	17.5	Loam	0.12
19918	SP-4	0.0909	0.0640	0.0717	0.0893	0.0790	2.8	2.8	4.43	2.47	53.8	28.8	17.5	Sandy Loam	0.12

ppm: Stands for parts per million. One part per million is equivalent to 1 pound of an element dissolved in 1,000,000 pounds of water. One part per million is the same as one milligram per liter (mg/L).

Auburn University

Auburn University, Alabama 36849-5411

College of Agriculture and
Agricultural Experiment Station System

Department of Agronomy and Soils
Telephone: 844-3958
Area Code: 334

Reply: Soil Testing Laboratory
Auburn University
Auburn University, AL 36849-5411

McGehee Engineering Corporation

March 9,2000

SAMPLE I.D.: M.S.& R. Equipment Company Inc.,Sloan Mountain Mine
LAB I.D. : E24-00 (9136-9139)
ANALYSIS : Special Mine Package
INCLUDES : Organic Matter, NO_3^-- N, Alkalinity,Potential Acidity, Particle Size,& Sulfur

Lab No.	Sample I.D.	Organic Matter -- % --	NO_3^-- N ppm	Neutralizing Potential Tons $CaCO_3$/1000 Tons	Maximum Potential Acidity
9136	TS-1	8.3	2.0	3.75	0.59
9137	TS-2	6.5	2.1	Trace	0.75
9138	TS-3	3.4	2.0	1.50	0.46
9139	TS-4	3.1	2.9	2.00	0.90

*maximum potential acidity values calculated from the average of four sulfur readings.

**Trace values are below our detection limit.

PARTICLE SIZE ANALYSIS:

Lab No.	Sample I.D.	----- PARTICLE SIZE ---- SAND	SILT %	CLAY ----------	TEXTURAL CLASS	H_2O AVAIL. cm/cm
9136	TS-1	36.25	61.25	2.5	SILT LOAM	0.15
9137	TS-2	25	67.5	7.5	SILT LOAM	0.18
9138	TS-3	33.75	53.75	12.5	SILT LOAM	0.16
9139	TS-4	31.25	63.75	5	SILT LOAM	0.17

A LAND GRANT UNIVERSITY

REPORT ON SOIL TESTS
AUBURN UNIVERSITY
SOIL TESTING LABORATORY
AUBURN UNIVERSITY, AL 36849-5411

NAME MCGEHEE ENGINEERING CORP
ADDRESS P.O. BOX 3431
CITY JASPER, AL 35502

COUNTY WALKER
DATE 1/26/00

LAB No.	SENDER'S SAMPLE DESIGNATION	CROP TO BE GROWN	SOIL* GROUP	SOIL TEST RESULTS					RECOMMENDATIONS			
				pH**	Phosphorus P***	Potassium K***	Magnesium Mg***	Calcium Ca***	LIME-STONE	N	P_2O_5	K_2O
					Pounds per acre				Tons/acre	Pounds per acre		
9136	TS-1 SEE COMMENT 224 SEE COMMENT 5	REVEGETATION	4	4.9	L 30	H 213	H 342	1420	3.5	60	60	0
9137	TS-2 SEE COMMENT 224 SEE COMMENT 5	REVEGETATION	4	4.3	L 21	M 135	H 102	490	4.5	60	70	40
9138	TS-3 SEE COMMENT 224 SEE COMMENT 5	REVEGETATION	4	4.3	VL 13	L 96	H 93	510	4.0	60	80	50
9139	TS-4 SEE COMMENT 224 SEE COMMENT 5	REVEGETATION	4	5.1	VL 9	L 65	H 105	1180	2.0	60	90	70

COMMENT NO. 224: Soil acidity (low pH) can be corrected with either dolomitic or calcitic lime.

COMMENT NO. 5: For perennial winter grass pasture, apply N, P, and K as recommended by September 1. Repeat N application in February.

FINAL COMMENT: As a precautionary measure, consider applying 10 lb. sulfur per acre per year. Mixed fertilizers often contain enough sulfur to supply this amount.

* 1. Sandy soils (CEC < 4.6 $cmol_c kg^{-1}$)
2. Loams & Light clays (CEC = 4.6-9.0 $cmol_c kg^{-1}$)
3. Clays and soils high in organic matter(CEC > 9.0 $cmol_c kg^{-1}$)
4. Clays of the Blackbelt(CEC > 9.0 $cmol_c kg^{-1}$)

** 7.4 or higher - Alkaline 6.6-7.3 - Neutral 6.5 or lower - Acid 5.5 or lower - Strongly Acid

*** Extractable nutrients in pounds per acre

APPROVED Hamilton Bryant

McGehee Engineering Corporation

March 9,2000

SAMPLE I.D.: M.S.& R. Equipment Company Inc.,Sloan Mountain Mine
LAB I.D. : E24-00 (9136-9139)
ANALYSIS : Special Mine Package
INCLUDES : Organic Matter, NO_3^-- N, Alkalinity,Potential Acidity, Particle Size,& Sulfur

MULTIPLE SULFUR ANALYSES:

Lab No.	Sample I.D.	READINGS 1st	2nd	3rd	4th	Avg.
		%				
9136	TS-1	0.0202	0.0197	0.0182	0.0178	0.0190
9137	TS-2	0.0178	0.0424	0.0177	0.0183	0.0241
9138	TS-3	0.0103	0.0293	0.0107	0.0092	0.0149
9139	TS-4	0.0210	0.0207	0.0531	0.0204	0.0288

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McGehee Engineering Corporation

March 9,2000

SAMPLE I.D.: M.S.& R. Equipment Company Inc.,Sloan Mountain Mine
LAB I.D. : E23-00 (9132-9135)
ANALYSIS : Special Mine Package
INCLUDES : Organic Matter, NO_3^-- N, Alkalinity,Potential Acidity, Particle Size,& Sulfur

Lab No.	Sample I.D.	Organic Matter -- % --	NO_3^-- N ppm	Neutralizing Potential Tons $CaCO_3$/1000 Tons	Maximum Potential Acidity
9132	SP-1	3.4	3.0	5.00	0.56
9133	SP-2	3.8	1.9	3.75	1.78
9134	SP-3	5.2	4.3	7.75	1.41
9135	SP-4	7.0	4.2	8.25	2.20

*maximum potential acidity values calculated from the average of four sulfur readings.

PARTICLE SIZE ANALYSIS:

Lab No.	Sample I.D.	----- PARTICLE SIZE ---- SAND	SILT %	CLAY ----------	TEXTURAL CLASS	H_2O AVAIL. cm/cm
9132	SP-1	31.25	53.75	15	SILT LOAM	0.17
9133	SP-2	48.75	41.25	10	LOAM	0.12
9134	SP-3	43.75	48.75	7.5	LOAM	0.14
9135	SP-4	48.75	46.25	5	SANDY LOAM	0.12

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					Pounds per acre				Tons/acre	Pounds per acre		
9132	SP-1 SEE COMMENT 5	REVEGETATION	4	5.6	VL 11	M 165	H 809	1420	0.0	60	80	40
9133	SP-2 SEE COMMENT 224 SEE COMMENT 5	REVEGETATION	4	4.5	VL 11	M 146	H 493	740	2.5	60	80	40
9134	SP-3 SEE COMMENT 5	REVEGETATION	4	6.2	L 26	M 174	H 614	2000	0.0	60	60	40
9135	SP-4 SEE COMMENT 5	REVEGETATION	4	6.2	L 24	H 204	H 751	2920	0.0	60	70	0

COMMENT NO. 5: For perennial winter grass pasture, apply N, P, and K as recommended by September 1. Repeat N application in February.

COMMENT NO. 224: Soil acidity (low pH) can be corrected with either dolomitic or calcitic lime.

FINAL COMMENT: As a precautionary measure, consider applying 10 lb. sulfur per acre per year. Mixed fertilizers often contain enough sulfur to supply this amount.

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		%				
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9133	SP-2	0.0557	0.0757	0.0574	0.0388	0.0569
9134	SP-3	0.0448	0.0518	0.0459	0.0385	0.0453
9135	SP-4	0.0848	0.0581	0.0774	0.0619	0.0706